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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/503,258	02/14/2000	Jae-Yoel Kim	678-454 (P9157)	6301

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EXAMINER

VOLPER, THOMAS E

ART UNIT	PAPER NUMBER
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2665

*13*

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/503,258

Applicant(s)

KIM ET AL.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. <u>12</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                              |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11</u> . | 6) <input type="checkbox"/> Other: _____.  |

## **DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 18 March 2004 was filed after the mailing date of the final Office action on 23 February 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Response to Arguments***

3. Applicants' arguments filed 4 December 2003 have been fully considered but they are not persuasive.

Regarding claims 7 and 12, Applicants argue that Gilhousen fails to disclose "a memory for storing orthogonal code numbers which cannot maintain an orthogonality due to an orthogonal code which a circuit data user uses at a maximum rate." The Examiner respectfully disagrees with this position. Gilhousen manages code assignments by maintaining an "ASSIGNED" list of the set of codes that are already assigned to user channels. In addition to the "ASSIGNED" list, the system maintains a "BUSY" list in which codes already assigned and codes recursively related to those codes already assigned are marked as being busy (col. 12, lines 20-40). Those codes recursively related to an assigned code are not assigned to a new user when

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a request for a channel code is made. Any recursively related codes *cannot* maintain orthogonality with each other, which Gilhousen clearly states (col. 11, lines 29-37). In the manner described above, the “BUSY” list of Gilhousen does in fact meet the limitation of “a memory for storing orthogonal code numbers which cannot maintain orthogonality ...”.

Furthermore, Gilhousen discloses a maximum data rate code, “0”, that prohibits any other code from maintaining orthogonality when it is in use (col. 11, line 59-62; see also Table 1). In keeping with the function of the “BUSY” list described above, when the maximum data rate code is in use, all of the other codes would be marked as busy. Applicants also argue that Gilhousen does not disclose “using a first orthogonal code for circuit data and then using an orthogonal code from the stored codes that cannot maintain orthogonality with the first code for the packet data.” However, neither claim 7 or 12 recite any limitation concerning circuit data and packet data, so Applicants’ argument with respect to that limitation is moot. That argument is treated with respect to claims 21 and 27 below.

Regarding claims 21 and 27, Applicants repeat the argument regarding a memory for storing code numbers that cannot maintain orthogonality, which is addressed in the paragraph above. In reference to Applicants’ argument that Gilhousen fails to disclose “a first orthogonal code for the circuit data and then using an orthogonal code from the stored codes that cannot maintain orthogonality with the first code for the packet data,” the Examiner believes this is a moot point. The Examiner relies on Tiedemann, not Gilhousen, to meet the aforementioned limitation for first assigning a maximum rate code to circuit data, then finding an available code for packet data. Specifically, Tiedemann discloses that when allocating resources in a CDMA system, priority should be given to voice data over any transmission of data traffic (col. 4, lines

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18-35). The Examiner has held that the voice data of Tiedemann represents the circuit data of the present invention, while the data traffic represents the packet data. Thus, it would be obvious to assign delay sensitive circuit data up to the maximum data rate code, and then assign packet data any code that becomes available thereafter.

4. Applicant's arguments with respect to claims 1, 17 and 25 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments with respect to the 112, second paragraph rejection of claims 21 and 27 have been fully considered and are persuasive. The 35 USC 112, second paragraph rejection of claims 21 and 27 has been withdrawn.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 21 recites the limitation "the circuit data" in line 11. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

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9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 7, 8 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Gilhousen (US 5,751,761).

Regarding claims 7, 11 and 12, Gilhousen discloses a plurality of channel transmitting circuits (see Figure 5) in a system that assigns orthogonal Walsh codes of varying length on the basis of channel data rates. The system also includes a cell controller that performs the function of the Walsh pool generator of the present invention. The cell controller maintains a list of codes assigned to particular user channels. It is inherent that the system contains a memory, since the controller maintains a list. The controller is able to determine which codes are recursively related to the assigned codes, thus unavailable for new assignments (col. 11, line 63 – col. 12, line 10). The codes recursively related to the assigned codes are representative of orthogonal code numbers that cannot maintain an orthogonality. Due to the tree structure of variable length Walsh codes, which are related by equation (1), assignment of a shorter length code assigned to a higher data rate channel precludes the use of certain longer length codes to lower data rate channels (col. lines 29-62; see also Table I). The controller identifies an available code of suitable length for a channel of a particular data rate, wherein the code, "0", corresponds to the maximum data rate (see Table I), and assigns the code to the requesting channel (col. 12, lines

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20-40). The data rate select signals from the control processor in Figure 5 demonstrate multiplying the channel outputs by control signals.

Regarding claims 8 and 13, Table I in the invention of Gilhousen illustrates codes that have lengths that are multiples of the code, "0", which corresponds to the maximum data rate. In this particular embodiment, the full length is 16 chips.

### *Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 9, 10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen (US 5,751,761) as applied to claims 7, 8 and 11-13 above, and further in view of Kumar et al. (US 6,418,148).

Regarding claims 9, 10 and 14-16, Gilhousen discloses all of the limitations, except for allocating codes based on priority of packet data users. Kumar discloses assigning resources according to priority, wherein the resources comprise CDMA spreading codes (col. 7, lines 38-60). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the priority assignment of Kumar in assigning the codes in the invention of Gilhousen. One of ordinary skill in the art would have been motivated to do this to prevent one user from hogging system resources.

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13. Claims 1-6 and 17-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen (US 5,751,761) in view of Kumar et al. (US 6,418,148) and Tiedemann, Jr. et al (US 6,335,922).

Regarding claims 1, 2, 17, 21, 25 and 27, Gilhousen discloses determining code numbers that are unavailable at a data rate lower than a maximum data rate, generating code numbers which cannot maintain an orthogonality when the maximum data rate is used, and storing the non-orthogonal numbers (col. 11, line 63 – col. 12, line 40). Gilhousen fails to expressly disclose allocating the code corresponding to the maximum rate to a supplemental channel for transmitting the circuit data, then allocating a code number to the supplemental channel for the packet data. Kumar discloses using supplemental channels in a CDMA system for transmitting variable rate data (see Abstract). Kumar also discloses assigning resources according to priority, wherein the resources comprise CDMA spreading codes (col. 7, lines 38-60). Tiedemann discloses that when allocating resources in a CDMA system, priority should be given to voice data over any transmission of data traffic (col. 4, lines 18-35). “Voice data” represents the circuit data of the present invention, while “data traffic” represents the packet data of the present invention. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use supplemental channels in the CDMA system of Gilhousen and to give voice data priority to the code representing the maximum rate. One of ordinary skill in the art would have been motivated to use supplemental channels to provide efficient utilization of system resources. One of ordinary skill in the art would have been motivated to give voice, or circuit data, priority to the code corresponding to the maximum rate because voice data is delay sensitive.



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Regarding claims 3, 18, 22 and 26, Table I in the invention of Gilhousen illustrates codes that have lengths that are multiples of the code, "0", which corresponds to the maximum data rate. In this particular embodiment, the full length is 16 chips.

Regarding claims 4, 23, 24, 28 and 29, Gilhousen discloses determining, based on a BUSY list of codes, a code that is available for a requesting channel that has a length corresponding to the data rate of that channel (col. 12, lines 20-40).

Regarding claims 5, 19 and 20, Gilhousen discloses all of the limitations, except for allocating codes based on priority of packet data users. Kumar discloses assigning resources according to priority, wherein the resources comprise CDMA spreading codes (col. 7, lines 38-60). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the priority assignment of Kumar in assigning the codes in the invention of Gilhousen. One of ordinary skill in the art would have been motivated to do this to prevent one user from hogging system resources.

Regarding claim 6, Gilhousen discloses a set of Walsh codes (Table I) that may be used to select a code to spread data provided that the selected code is not recursively related to any currently assigned code (col. 12, lines 20-40). The code, "0", corresponds to the maximum data rate, since this is the shortest code, i.e. root node.

### *Conclusion*

14. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is 703-305-8405 and

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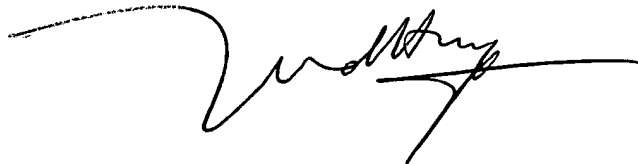
fax number is 703-746-9467. The examiner can normally be reached between 8:30am and 6:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at 703-308-6602. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Thomas E. Volper



March 31, 2004



HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600